COMPUTERWORLD
The Newsweekly for the Computer Community

Opler Joins IBM Research Area As Consultant

YORKTOWN HEIGHTS, N. Y., Ascher Opler has joined the staff of IBM as consultant to Dr. Arthur G. Anderson, director of research. A specialist in the areas of programming systems, information retrieval, and the application of computers to complex mathematical and physical problems, Mr. Opler was formerly executive director of Computer Usage Education, Inc., a subsidiary of Computer Usage Company, Inc.

Mr. Opler has been active in the computer development field since 1947, when he became a research physicist for Dow Chemical Co. In order to solve certain problems in spectroscopy, he designed and constructed two analog computers. During the next few years, he developed digital techniques for calculation of heat transfer, ion exchange, continuous distillation and optics.

Mr. Opler is the editor of a recent book, Programming the IBM System 360, and an associate editor of the Journal of the Association for Computing Machinery.

NCR Gets Its Biggest Order Ever — $16 Million

TOKYO – A network of over 1,000 teller terminals and 45 NCR CRAM mass storage units has been installed at one of the world's largest on-line financial systems. The $16 million network, being installed at Japan's giant Sumitomo Bank Ltd., represents the largest order ever received by the National Cash Register Company.

In addition to nine NCR 315 Rod Memory Computer systems, the network will include more than 1,000 electronic teller consoles, 45 CRAM (Card Random Access Memory) units and a long column of other peripheral equipment such as magnetic tape handlers, paper tape readers, and high-speed MICR check sorters and printers.

Katakana Print-Out

With special emphasis on its role as "the customer's accountant", Sumitomo is integrating Japanese-produced "kana" typewriters with the NCR teller consoles. These special typewriters print out detailed information in "Katakana", the syllabic Japanese script in which day-to-day business transactions are handled.

When a deposit or withdrawal is indexed into the teller console, the system locates the customer's account in a CRAM file at the console, updates the account and sends the new balance and Katakana data back to the branch within a fraction of a second.

On-Line by 1969

Sumitomo plans to have on-line processing of all bank business completed in its 141 branches in Tokyo and Osaka area by the end of 1969.

The bank has been using NCR computer equipment for off-line processing since 1960. Transactions now being handled on-line include deposits and withdrawals on savings, checking, time deposits and all other types of deposits. In addition, the system is processing loan and discount accounts, foreign and domestic exchange and handling the automatic deduction from customers' accounts of utility payments for water, gas, telephone and television.

Management Tool

Besides providing fast, accurate customer service, a bank spokesman said "the on-line system also will serve as a management tool, as the information instantaneously obtained during the collective processing of paperwork in the branches is analyzed from all angles and up-to-second information can be inquired from head and any branch office."

Looking toward the future when Japan, along with many other countries, will operate more and more as a checkless and cashless society, the spokesman added: "Banks in such a society will be the faithful accountant, offering a wider range of service to all customers, including corporations and individuals. The Sumitomo total on-line system is now being carried forward with such a vision."

The Sumitomo bank, with main offices in Osaka, employs 14,000 persons worldwide.
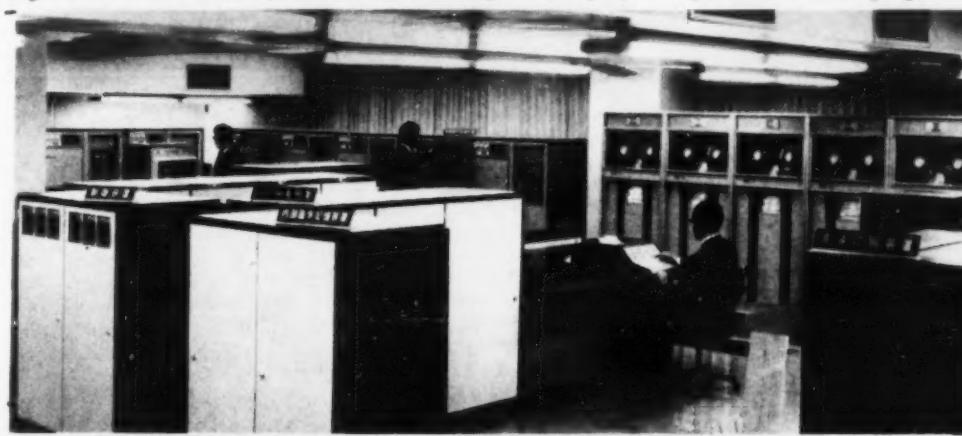
NCR's Largest Order

According to George Haynes, vice president and group executive for NCR's international operations, the Sumitomo order is the largest ever received by the company. The order follows a successful testing period of NCR 315 computers installed at the bank.

The Japanese subsidiary, which handled the system and selling part of

Two NCR 315 RMC systems, seen here in the DP Center of Japan's Sumitomo Bank, were the forerunners of this week's $16 million order.

GE Unveils 8 Diginet Data Sets

NEW YORK, Nov. 14 – The General Electric Company unveiled eight new data transmission products and announced its "full-scale entry into the digital communications business" at a press conference in New York today.

The new family of data sets, called the "Diginet Series," will be used to translate data from computers and other business machines into signals suitable for long-distance data transmission, and then reconvert them at the other end of the line. The eight new products will supplement four others that GE announced earlier this year.

The product line covers speed and bandwidth requirements ranging from 300 to 230,000 bits per second. Included are: acoustic couplers for connecting portable teleprinters by telephone to central time-sharing computers without special wiring; conventional data sets for voice-grade lines; and high-speed interface devices for transmitting computer information via microwave or satellite links.

Richard P. Gifford, General Manager of GE's Communication Products Department, Lynchburg, Va., said that the Diginet product line is now the broadest line of data sets offered by any independent manufacturer. The equipment, according to Gifford, will be marketed to the more than 2000 independent telephone companies across the nation, to major companies that have their own private communications systems, to original equipment manufacturers, and to government agencies.

The Diginet 100 and 200 Series data sets will operate over single voice-grade circuits and offer various options of speeds from 300 to 2400 bits per second, simplex or duplex transmission modes, direct or acoustic coupling, and optional reverse signalling channels.

The high-speed Diginet 400 and 500 interfaces will operate at bit rates of 50,000 to 230,000 bits per second, with means to transmit the signals over single wire pairs to local exchanges where they can be picked up for further transmission

Typists Input Data
Data Transmission System Announced

NEW YORK – A 180,000 - character storage capacity magnetic tape cartridge is featured in a new multi-purpose data communication system announced today by Communitype Corporation. The electronic package eliminates the need for preparing keypunched cards. Data typed on a standard-keyboard electric typewriter is automatically retrieved as a print-out at nearly 175 words a minute or transmitted by a direct dial phone call at 1,000 words a minute.

The Communitype 100SR Data Communications System is compatible with most standard computers and capable of performing virtually any paperwork reporting procedure with efficiency, speed and ease of operation. Basically, any typed information can be stored on magnetic tape and retrieved, as required, as a 15-character-per-second print-out. Also, stored information can be transmitted by telephone to a composer, tape drive, or another Communitype system. Data which takes eight hours to type can be transmitted in four minutes. The system is also designed to accept data from punched cards processed through a card reader.

Keypunch Cost Reduction

Communitype president Robert Norman King described the system as a "sophisticated third generation source data system". He expects that the concept will have a great impact in reducing DP costs through the elimination of keypunching.

The integrated system can also serve as a communication link between two points for information retrieval purposes, and for the automatic production of multi-original copies of sales and other letters.

The system is Communitype's first major product. It represents the results of several years of research, development and field and market testing.

85% Cost Cut

A study of paperwork procedures employed by a New York firm showed how seven steps used to get information to a computer can be reduced to one step using the Communitype, with estimated reduction in costs amounting to 85%. A pilot installation at the Research Foundation of the State University of New York at Albany showed that the system substantially speeds up input to

Communitype System – Only the controls in front, (and the fact that the drawer can't be used for stationery) shows the Communitype terminal is not just an electric typewriter. Here the 30,000 word cartridge is being demonstrated.

Editorials

The Typing Pool Threat

An interesting item this week concerned the comparative accuracy of typists and keypunchers. Apparently some government studies have shown that typists are considerably more accurate — and faster — than keypunchers. One of the suspected reasons for this is that keypunchers know that their work is going to be verified — so a mistake or two is minor. Another idea is that typists see a better record of what they have just done, and are able to correct errors.

However it may be, it is clear that the typing pool is becoming an alternative to the keypunch room when data is to be entered into a computer system, particularly from remote sites. The idea is to place the terminal right on a secretary's desk, and to get a typist rather than a keypuncher to enter the data.

The idea of promoting the typist is an intriguing one. It opens up a new labor pool which requires little extra training for the job — and which can be employed on other jobs when there is no data to be entered. It provides new opportunities for promotion for the typist — and for the keypunch operator. And, of course, it does provide for another variation on the theme as to what will outdate punched cards.

In peril — from the typing pool.

DP & Visible Audit Trails

One of the standard objections made to computerization of different systems is that the visible audit trail vanishes. There are, of course, many ways around this, and lately auditors have even come to bless computers for their ability to improve pre-computer audit standards. But even so, a visible audit trail does have some obvious attractions, and it has always been a nuisance that we never had one available.

It was with quite a shock, therefore, that looking down the list of virtues of a computerized voting system, we noted that unlike its predecessors the system provided a visible audit trail. Checking further, we found this to be quite correct — the system (which was used for the first time last week) resulted in punched cards which could be collected — while previous voting systems simply increased counters, without providing a vote-by-vote record.

Nice being on the **other** side of the argument for a change.

Banker's Choice

NCR's achievement in landing the $16,000,000 order from Japan is one of the encouraging signs of a healthy American computer industry. Coming on top of the recent, huge Barclay's Bank English order, which went to Burroughs, it is clear that even in the two major foreign computer-manufacturing areas American products are sought after by those who best know the value of money.

Could any tribute be stronger than that?

Letters To The Editor

To the Editor:

Let me comment on the Salary Survey series you have been publishing in COMPUTERWORLD.

I have no doubt that the series provides a service to the industry. I also feel that, as presented, it can be a disservice. One of the basic problems with titles and generalized job definitions is that they can apply to individuals in vastly different situations.

The "manager" who has a small punch, card installation with several people is, in most cases, called a Data Processing Manager. He does perform functions corresponding to a literal interpretation of the job definition which you published.

If we broadly include, in one category, all of the unit record, all of the card-oriented computer, and all of the minimum tape-disk computer installations that are currently operating in this country under a "Data Processing Manager", we would find this number represents a significant percentage of the total EDP installations.

Generally, these small installations are a reflection of the size of the company and/or the extent to which it uses EDP. With some exceptions, of course, we can expect that the salaries paid to these "Data Processing Managers" would reflect their firm's relatively small investment in EDP.

On the other hand, there are those in large organizations with large commitments to EDP who have reached true EDP executive positions. These people search out new titles such as V.P. Data Processing; Director, Information Systems; Director, EDP, etc. However, for some strange reason, these positions end up in salary surveys lumped under "Manager, Data Processing". Considering that salaries, plus stock options, plus incentives for these posts have long passed the $20,000 annual figure, it appears that these people are grossly overpaid in relation to the national survey. In individual cases this might be true, but I'll leave those who are overpaid to speak for themselves.

Regardless of how salary statistics for data processing managers are averaged, the pure weight of numbers at one end will more than likely produce figures which are typical of the lower segment only. If reports from these DP managers whose much higher salaries are reflections of their position and responsibilities are included in the statistics, they only serve to pull the average up slightly (causing some to appear underpaid).

My general complaint is not with salary surveys themselves, but with the reaction in the aftermath. There are many in the EDP profession who are gaining recognition both for themselves and for the technology as a whole. They are striving to achieve an image for EDP as an equal partner to any other major staff function in the company. These efforts are beginning to bear fruit for some and these successes promise to benefit everyone in our industry. Unfortunately there are those in management or in staff positions of influence who, upon reading your survey, can come to the conclusion that $277 a week or some equivalent amount is normal or average for a Data Processing Manager. In the large segment of the population this is correct, for the reasons I've stated above. Unfortunately

everyone who, for real or imagined reasons, is termed a "Manager, Data Processing", tends to be classed in the same mold.

This may sound to some like a question of semantics, but it is of vital concern for those of us who are seeking to make a considerable contribution to the EDP profession by virtue of our application of advanced technical and management skills.

After all, we have to face the compensation review committee like anyone else, and it does elevate the discomfort index to face a top executive who wants to know why "everybody else in the country is getting their EDP function handled by a $277 per week type, so why do we have to shell out over $20K a year for someone to do the same job."

Name withheld by request

Sounds like your "why so much" chap has read "How to Lie With Statistics." But you raise a good point. Perhaps the best way out of the situation is, as you suggest, to elevate one's title to something like Director of Automated Data Systems, Manager of Information Transformation, etc.

Our salary survey was limited to personnel at computer installation sites, so salaries at unit-record-only installations were not included in the figures. However, next year we plan to present a correlation of the salary of people in EDP professional positions versus the number of years they have been in their position, and the value of the computer equipment with which they are associated. This should help clarify EDP compensation levels versus background and responsibilities. Ed.

EAI Announces Digital Computer, Joins CDC In Super Hybrid Plan

NEW YORK — Electronic Associates, Inc., according to two nearly concurrent announcements, will significantly expand the scope of its activities in both the digital and hybrid computing markets.

As predicted in last week's issue of COMPUTERWORLD, EAI introduced its improved 8400 MOD II digital computing system at the Fall Joint Computer Conference this week. Meanwhile, EAI and Control Data Corporation have negotiated a non-exclusive agreement for joint marketing of ultra-sophisticated hybrid computer systems consisting of CDC's super-scale 6000 Series digital computers and EAI's large 8800 analog computers.

These two announcements indicated that EAI — long acknowledged as the leader in the comparatively small analog field, with a claimed 70 percent of the total analog computer market — is determined to carve out a more significant position for itself in the digital and hybrid markets as well.

The new marketing agreement was revealed in a joint announcement by CDC President William C. Norris and EAI President Lloyd F. Christianson. An EAI spokesman said that details of the arrangement have yet to be worked out, but it is likely that CDC will handle most of the interfacing and develop the required software. The spokesman also said that the CDC/EAI superhybrid systems will probably be designated the "9900 Series."

Whereas the CDC/EAI hybrid systems are revolutionary in that their capabilities should far exceed those of any previously-announced hybrid computers, the new EAI 8400 MOD II is an evolutionary digital computer that offers higher speeds and better multiprogramming facilities than its predecessor. (The original EAI 8400 system was announced in November 1964 and initially delivered in mid-1965.)

The 8400 MOD II uses a "fetch-ahead" instruction execution technique that results in a 25 percent reduction in average execution times. Times required for 32-bit floating-point arithmetic operations have been reduced to 2.7 microseconds for addition, 4.5 microseconds for multiplication, and 9.2 microseconds for division. Memory cycle time is 1.0 microseconds, and the core memory capacity can range from 8K to 64K 32-bit words.

The other significant new feature of the 8400 MOD II is a base register that provides for dynamic program relocation and memory protection. User programs can be relocated in blocks of 256 words under monitor control. The base register improves the 8400's capability to handle two or more programs simultaneously and prevents co-resident programs from interfering with one another.

The 8400 MOD II is designed primarily for general-purpose scientific and engineering computation, digital and hybrid simulation, and on-line monitoring and control. It will not be promoted — nor supported by software — for business data processing or multiple-access time-sharing.

Delivery of the 8400 MOD II is promised six months after receipt of an order. Purchase price is approximately $270,000 for a central processor and 16K words of core memory, with no peripheral equipment.

To the Editor:

As a subscriber to COMPUTERWORLD, I have been very pleased with the issues I have received and found them highly informative. I do take exception, however, to the column entitled "Rumor Mill" which I frankly feel is mud slinging and hardly justifies publication in your newspaper.

For example, some of your questions suggest the existence of certain undesirable conditions. Yet one could reply that no company really is in this position. There is a heavy inference that things are bad, that things are not working as they ought to be. This might be highly factual, but I would rather see your newspaper naming names, naming situations and naming reasons. Frankly, I would like this type of stimulus eliminated from your publication and have it deal with this field at a high level as indicated already by many of your articles. I would rather look to COMPUTERWORLD in the tradition of the *New York Times* and the *Wall Street Journal* rather than some of the more flamboyant publications.

Congratulations on a very fine job and you have my best wishes for a continued and successful publication.

W.R. McCartin
Manager — Information Services
Noxell Corporation
Baltimore, Maryland

It is rumored around our editorial desk that the millstream may shortly be damned by facts. Ed.

New Telequote 70 Reaches 4 Services
Display Can Access Different Systems

NEW YORK -- A single electronic console capable of communicating directly with multiple networks to retrieve computer-stored information has been unveiled by the Bunker-Ramo Corporation. A group of Wall Street brokers and stock exchange officials saw four information services shown live on the new Telequote 70. The desired network or service is selected by pressing a button on the keyboard, and information from two services are on view simultaneously on the display unit.

The four services on display were the New York Stock Exchange Ticker, the American Stock Exchange Ticker, a business news wire service and Bunker-Ramo's computerized quotation service. Until now no device was available to provide access to all four of these widely used financial services.

Bunker-Ramo is making arrangements to carry commercial newswires on the Telequote 70, and it will be possible to pipe in services such as private wires and investment advisories if subscribers want them.

Bunker-Ramo brings experience with over 50 cathode ray tube systems to the new device, which contains a dual 6-inch cathode ray tube screen in the display unit. The company believes it is by far the largest supplier of CRT's.

A.A. Barnett, vice president of marketing for the corporation's Business and Industry Division said: "We have here for the first time a single system that receives and displays the one-way flow of information from stock tickers and newswire services, while being used for the selective retrieval of data stored in several different computer systems."

Demonstrated for the group of brokers was the retrieval of a customer's record -- by means of his account number -- from computer storage. The record was displayed on one of the dual screens for rapid determination of margin status. Another function enables the user to retrieve computer-stored research reports on given stocks, displaying them graphically or in text in a few seconds. Also shown was a method of using the equipment for direct transmission of an order to buy or sell securities. The message appears on the screen to be checked visually and corrected before it is sent.

All incoming and outgoing messages are processed through out-of-the-way electronic control units. First installations of the Telequote 70 are scheduled within eight weeks. Costs will vary with the number and kind of systems the subscriber wants access to and the number of desk-top units required.

Bunker-Ramo's introduction of the Telequote raises again the possibilities of multi-access peripherals. By no

The Telequote 70, just introduced, can tap into a number of different services under the controls which can be seen on the two desks. Users can also use it to access their own computer systems.

means a new problem, it keeps on raising its head. Only last month when England's second time-sharing system opened it was found that access to it could be made from terminals other than the ones supplied.

ADR's Autoflow Selling Well
Flowchart System For Lease

PRINCETON, N.J. -- Applied Data Research, Inc., a computer software and service company, has leased sixteen more Autoflow systems during the past several weeks.

Autoflow, a computer documentation system developed by ADR, produces two-dimensional flowcharts automatically and directly from COBOL, FORTRAN and Assembly Language programs.

Since its development last year, ADR has leased approximately 130 systems to commercial and Federal government agencies.

The new commercial Autoflow users include: American National Bank, American Optical, Associated Hospitals of Wisconsin, Bell & Howell, Continental Assurance, Continental Can, International Harvester, Los Angeles Times, North American Aviation Pure Oil, Shell Oil, Southern California Edison, Standard Oil of Indiana (Credit Division), Sunbeam, Tennessee Eastman Chemical, and Zenith Radio.

Autoflow, available on a three-year lease or service basis, is being used primarily on IBM System/360 1400 and 7090 computer series. It automatically performs all statement analysis, page allocation, line drawing and rearrangement of program flow. The system is one of three proprietary software products now available from ADR.

New Style Of User Group Starts
File IV Users Meeting In January

The "IV League" composed of users of Informatics' MARK IV File Management System will hold its third meeting, January 22 & 23, 1968 at the Sportsmen's Lodge, North Hollywood, California.

The "IV League" formed in Los Angeles in July 1967, is a unique System/360 software users group representing over 80 MARK IV System installations.

Co-Chairman for the League are Daniel Delgrosso of Standard Oil (Indiana), and Robert Benjamin of National Dairy Products Corp. League secretary is Kirk M. Bent of The Prudential Insurance Company of America.

The MARK IV File Management System is an advanced general purpose software proprietary product for use with IBM/360 equipment. MARK IV automates many of the functions of computer programming through the specification checking (Spec Check) technique. The system operates under DOS or OS environment. It is designed for a wide range of file oriented data processing applications.

The MARK IV File Management System is a proprietary product of Informatics Inc. of Sherman Oaks, California.

Informatics Inc. specializes in the design, analysis, programming and implementation of computer based systems. The company has its headquarters in Sherman Oaks, California and offices in Washington, D.C.; Englewood Cliffs, New Jersey; Boston, Massachusetts; Rome, New York, and Amsterdam, The Netherlands.

New Generator Simplifies File Updating

LOS ANGELES, CALIF. -- A new program generator that simplifies file maintenance programming was announced today by Software Resources Corporation. The generator -- called GENCO -- accepts shorthand-type input statements and transforms them into a complete modular COBOL file maintenance program.

GENCO can be used by COBOL programmers -- including trainees -- the company said, to generate logically sound and error free programs. With only a few hours of programmer time, GENCO can produce complex file maintenance programs that otherwise

would cost many thousands of dollars to develop.

The generator is fully operational and available for immediate delivery. Among the GENCO features announced by the company are the following:

- Easy-to-learn system with simple coding sheets provided.
- Complete COBOL source programs generated.
- Modular form of the generated COBOL program permits easy modification to meet special requirements.
- Data processing priority feature allows the user to add, change or delete records of data fields at his convenience.
- Extensive range of updating, validations and default action is provided.

GENCO operates on an IBM System/360 with 128,000 bytes of storage. The COBOL file maintenance programs produced by GENCO can be compiled on a smaller 32,000-byte 360.

ACM Will Register Software Names

BURBANK, CALIF. -- The ACM Special Interest Group on Programming Languages (SIGPLAN) has started a registry for programming languages and major programming packages to attempt to clear up and avoid the duplication of program names and acronyms. The registry will be advisory only -- that is to say that when it discovers a duplication it will inform the author of the later package about the possibility of confusion, but will not take it any further.

The operation will work under a new SIGPLAN Registry Subcommittee headed by Arnold Sobel, Lockheed-Calif. Company. It will hold a registry containing for each entry:

1. Name or acronym of the programming language or software package.

2. Derivation of the name or acronym.

3. Indication as to whether the name is legally protected, e.g., as a trademark.

4. Brief one or two sentence distinguishing description.

5. List of computers for which availability is current or planned.

6. Conditions of availability, e.g., free or leased.

7. Bibliographic references to authoritative documentation.

8. Names and addresses of responsible contacts.

9. Date of initial registration, and latest revision, validation, or cancellation.

10. Miscellaneous or additional information or comments.

The services to be provided by the SIGPLAN Software Registry will include the following:

1. Register submitted names and acronyms. Duplicates would be registered, but submitters would be informed of previous registrations and their legal status, and advised to cancel their entry and make another choice.

2. Answer queries regarding registered names and acronyms.

3. Annually solicit and regularly accept revisions to existing entries.

4. Annually publish the complete registry.

It is expected that the creation and maintenance of the SIGPLAN Software Register will be a considerable undertaking. A retrospective literature search is under way to compile an initial version of the register,

and an ongoing literature search will be conducted for reports of new programming languages and software packages. These would be entered in the register, and the authors would be sent a copy of the entry and a form letter inviting them to complete, revise or validate it.

Calendar

CONFERENCES, SYMPOSIA

Nov. 14 - 16, Anaheim, Calif. - Fall Joint Computer Conference. Convention Center. Contact: AFIPS, 345 E. 47th St., N.Y. N.Y., 10017

Nov. 27 - 29, New York City - American Management Assn. meeting on "Administrative Management in the Electronic Era," Contact: AMA, 135 W. 50th St., N.Y., N.Y., 10020.

SEMINARS, WORKSHOPS

Nov. 15 - 17, Phoenix, Ariz. - 15th Annual Electronics Seminar, "EDP – Potential for Management." Sponsored by American Gas Association - Edison Electric Institute Electronic Data Processing Committee. Hotel Westward Ho, Phoenix.

Nov. 16 - 17, Boston, Mass. - "In-Service Education and Staff Training for Education Data Processing," workshop sponsored by Assn. for Educational Data Systems. Contact: AEDS, 1201 16th St., N.W., Washington, D.C. 20036.

Nov. 17 - 18, Anaheim, Calif. - Seminars on "Computer Systems Analysis Techniques" and "Information: Its Storage, Retrieval and Management", sponsored by ACM. Contact: ACM, 211 East 43rd St., New York, N.Y. 10017.

COMPUTER CENSUS TAKERS

EDP Industry and Market Report is compiling a National Computer Installation Census. The computer installation descriptions in the Census are compiled each six months.

EDP I & M Report is seeking alert men and women with their knowledge of computer equipment and its applications to conduct this census on a regular basis. The census is conducted by telephone and/or personal visits. Each census taker will work within 50 to 100 miles of his home.

Computer census taking is a part-time project. The hours are quite flexible. Compensation is good. An excellent way to become acquainted with computer installations in your area.

For further details, clip the coupon below and return it with an outline of your computer experience and the days and/or hours you would be available for computer census taking activities.

EDPeople

Ferroxcube, URS, and IBM Name New Executives

Joseph Cieri has been appointed Vice President - Operations of *Ferroxcube Corporation*. He is responsible for all manufacturing operations and services, Quality Control and Purchasing for Ferroxcube's Saugerties facility.

Ronald J. Avery was promoted to the position of assistant product manager, recording heads. Mr. Avery came to *Ferroxcube* in 1966 as an engineer in the recording head department.

Howard E. Regan has been promoted to Manager of the Contracts and Administration Department for the Southwest Operations of *URS Corporation*. He was formerly a senior systems analyst with the Company.

URS Corporation specializes in the application of computers to business, education, science and defense.

B. C. Christensen has been elected vice president of *IBM World Trade Corporation* and will be responsible for IBM's operations in Europe, Africa and the Middle East, with headquarters in Paris.

Mr. Christensen succeeds Jacques C. Maisonrouge, a French national, who was recently elected president of IBM World Trade Corporation, with headquarters in New York.

Wayne Aamoth has joined *Programming Services, Inc.* and has been appointed vice president of plans and programs - a new position.

The *National Cash Register Company* has appointed W. S. Harris as Director of Department Store Systems, a new department.

The new group, comprised of 20 retail systems specialists reporting to Harris, will be responsible for researching all phases of the department store field and defining overall operating and management control concepts.

Nick Mayo has been named vice president and director of marketing for *Computicket Corporation*.

Computicket Corporation is a subsidiary of Computer Sciences Corporation, an independent organization in the field of computer systems design, programming and related services. Computicket Corporation was formed to market and operate a computer-based system for the selection, printing and sale of sports and theater tickets at supermarkets, banks, hotels and other commercial and retail outlets.

Raymond M. Fillinghim has been named manager of the Southwestern United States office of *Scientific Control Corporation*. He will be responsible for the sale of all Scientific Control Corporation Computers and related products in Texas, Oklahoma, New Mexico, and Colorado.

Jon Anderson has been named South Central District Sales Engineer of *Bryant Computer Products*. He will be headquartered at the new South Central District Sales Office in Dallas, Texas.

John P. Buchan and Arthur H. Hausman have been appointed executive vice presidents of *Ampex Corporation*. Both were previously Ampex group vice presidents.

I. Richard Seils has been appointed to the newly created position of Marketing Coordinator of the Department of Defense Marketing and Engineering Group of the *Optical Scanning Corporation*.

Walter J. Gerstenberg has joined *Software Resources Corporation* as Western Regional Sales Manager. He will be responsible for directing the company's software package marketing efforts in the western states.

Gerstenberg was formerly an Assistant Vice President of United California Bank in Los Angeles where he was responsible for the sale of data processing services to the California savings and loan and banking industries.

Luther A. Schwalm was today elected *Management Assistance, Inc.* President by its Board of Directors. He will assume the duties of chief operating officer.

Jorge M. Gonzalez, formerly the President, was elected to the newly created office of Vice Chairman of the Board and will hereafter serve as MAI's chief executive officer.

K. H. Pergande has been appointed manager of commercial and government systems in the *National Cash Register Company's International Division*.

He will be responsible for overseas sales of NCR's electronic data processing equipment in the government and commercial areas, the latter including hospitals, hotels, and transportation firms.

PDP-8/I Announced At DEC Meeting

BOSTON, MASS. -- Introduction of a new fast, low-priced integrated circuit general purpose computer, the PDP-8/I, a follow-up to its successful PDP-8 Computer, was announced by Digital Equipment Corporation at the company's annual meeting here.

The PDP-8/I will become the newest member of Digital's small computer family which includes the PDP-8 (over 1000 installations) and the PDP-8S (over 700 installations). The new computer is fully compatible with the other two.

Features

Digital President Kenneth H. Olsen explained that the PDP-8/I "has all the features of the PDP-8 plus a new ease of interfacing, expanded software ware, new options, and is more compact." The basic machine, including Teletype and 4096 words of 12-bit core memory, will sell for $12,800.

Integrated Circuit Construction

PDP-8/I is made with advanced TTL monolithic integrated circuits, which help give it high reliability and noise immunity. PDP-8/I will interface to a wide range of DEC peripherals, including the DECdisc, Digital's 32,768 word random access disc memory file, and DECtape, its magnetic tape facility.

The basic PDP-8/I is pre-wired so that the first extra 4096 words of core memory and the most popular peripherals can be plugged in without further interface. These include a high speed paper tape reader and punch, a 100 card-per-minute reader, an incremental plotter, and a scope display. PDP-8/I will offer a new DECdisc or DECtape systems software package in addition to standard PDP-8 software.

Hardware

The computer features the same fully parallel organization and instruction set as the PDP-8. Its 1.5 microsecond cycle time performs 333,333 additions per second.

A new extended arithmetic option is also available which permits multiplication and division in approximately 6 and 6.5 microseconds respectively. Multiplication and division can also be handled through standard software routines with the basic PDP-8/I.

Peripherals

PDP-8/I is expandable and easy to interface with other equipment. Its flexible, high capacity input-output bus allows it to economically interface to a variety of peripherals. In addition to standard teletype, the PDP-8/I operates on all of Digital's optional devices.

Software

A new systems software package is available which takes full advantage of the 32,768 words or more of DECdisc or DECtape. The standard software package includes a MACRO 8 Assembler, PAL III Assembly Language, Tape Editor and Debugging programs, Linking Loader, mathematical function routines, and utility and maintenance programs.

On-line tape editing and debugging, a unique DEC feature, establishes a close programmer-machine relationship in the PDP-8/I. This results in faster preparation of operating programs.

45 CRAM Units

NCR Gets Big Order From Japan

the order, is running neck-and-neck with England as NCR's largest. Its growth rate has increased sharply in the past few years.

Equipment for the Sumitomo installation is being manufactured by NCR in Dayton, O. and Hawthorne, Calif.

The CRAM feature is thought to be the major reason for the Sumitomo order. CRAM is also considered to be the major factor in the continuing economic success of the NCR 315.

More than 50 mutual savings banks and savings and loan associations are currently using NCR 315 on-line systems with CRAM for fast and dependable customer service. In addition, five of NCR's domestic data centers now offer on-line services, in which data input consoles in financial institutions are linked directly by telephone lines to 315 CRAM computers. These centers alone are currently handling more than three million accounts. In fact, the on-line savings account application may well be the most widespread application of on-line techniques to date.

CRAM systems also are widely used by other types of businesses which require high-speed random access to large volumes of data.

With CRAM (Card Random Access Memory) NCR introduced in 1962 the computer industry's first random access magnetic-card memory. CRAM was designed for users requiring high-speed economical random access to large volumes of information.

The first CRAM unit, the NCR 353-1, has evolved through a number of stages, both mechanically and as regards magnetic storage capacity. For example, the newest model, the 353-5, has 10 times the storage capacity of the first model.

With the CRAM principle, magnetically coated plastic cards are stored in easily removable decks. To read or write data, the CRAM unit feeds a card onto a rotating transport, where its information channels pass read-write heads as the card is returned to the deck.

The first CRAM units held 256 cards per interchangeable cartridge. They had seven recording tracks on each card and a storage capacity of 8.3 million digits of information per cartridge. By increasing the recording density, improving the read-write heads, and increasing the number of cards per cartridge along with their size, the cartridge capacity jumped to 12 million digits, 24 million digits and, with the 353-5, to 82 million digits. Up to 16 CRAM units can be used on-line with an NCR 315 computer at one time. There is no limit, of course, to the number of cartridges of filed information which can be conveniently placed in the handlers.

As CRAM's storage capacity has been increased, so has the access time of the units been improved. The 353-5, for example, transports a card from the cartridge to the read-write position on the drum in 150 milliseconds. At first, the card delivery was by gravity with vacuum assistance, but the new units accelerate the card by high-speed rollers as soon as it is released from the cartridge.

The 353-5 CRAM has a movable head assembly with 35 read-write heads. The assembly can be moved to any one of four positions for access to the 144 recording tracks. Data transfer rate is 38,000 characters a second.

$ $ FINANCIAL MATTERS $ $

DALLAS, TEX. – *Recognition Equipment Incorporated* has completed the acquisition of the *Teletrans Corporation*, Farmington, Michigan, in exchange for Recognition Equipment common stock. Announcement of an agreement in principle for the acquisition was made on October 4.

Teletrans has developed an automatic airport baggage handling system. Recognition Equipment is a manufacturer of optical character recognition systems and has as its customers several major airlines.

PANORAMA CITY, CALIF. – *Computing & Software, Inc.* (C&S) announced that it has reached agreement with *Control Processing Services, Inc.,* (CPS) of Hyattsville, Maryland whereby C&S will acquire the assets of CPS for common stock valued in excess of $3.5 million.

Control Processing Services provides computer-derived services for the management and upgrading of specialized mailing lists. Their principal business includes fund raising, mail order and subscription fulfillment.

C&S currently sells specialized mailing lists in the Western U.S., and credit information reports in the metropolitan Los Angeles area.

Computing & Software, a nationwide computing-oriented services company traded over the counter, reported sales of $11,998,000 and after-tax net income of $544,000 for the nine month period ending July 30, 1967.

NEW YORK – *Randolph Computer Corporation* has executed a loan agreement with The First National Bank of Boston under which a group of banks and other financial institutions will extend senior financing to the company. The commitments to date total $27.0 million of which $9.5 million is being used to refinance previous interim loans.

John Randolph, president of the company, stated that this new agreement is the vehicle for meeting the company's future senior financing requirements.

PRINCETON, N.J. – *Applied Data Research, Inc* has acquired *Data & Information Products, Inc.* DIP is a marketing/sales company that specializes in representing a number of data processing companies in the midwest market. Its offices are located in Chicago.

Prior to its acquisition, the company served as ADR's midwest representative for Autoflow, an ADR proprietary software product used in computer documentation. DIP's relationship with other DP companies will continue.

The acquisition, for an undisclosed number of shares of ADR stock, results in DIP becoming a wholly-owned ADR subsidiary.

MT. KISCO, N.Y. – *Computer Usage Co.* reports revenues of $13.3 million for its 12th fiscal year ending Sept. 30, compared to $8.9 million for the prior year. Net income increased to $603,335 (85¢ per share) from $449,378 (64¢ per share). President Elmer Kubie also announced that CUC has tentative plans to raise $3.5 million through the sale of common stock, probably by means of a subscription offer to stockholders later this year.

How They Moved Last Week

Week Ending November 10, 1967

	1967 High	1967 Low	Week High	Week Low	Last	Week Net Change	Week % Change
NEW YORK STOCK EXCHANGE							
Addressograph-Multigraph	75 1/4	46 7/8	72	67	69 1/4	+ 2	+ 2.97
American R&D	165 3/4	37 3/4	155	142 1/2	149 1/2	+ 1 5/8	+ 1.10
Ampex Corp.	40 3/4	22 3/4	33 1/2	31 1/2	32 7/8	- 1/8	- 0.38
Burroughs	174 1/8	80 7/8	154 3/8	144 5/8	145 7/8	- 7 3/8	- 4.81
Collins Radio	114 7/8	53	103	93 7/8	94 1/8	- 6 3/4	- 6.69
Control Data	163	33 1/2	154 3/4	145	146 1/2	- 1 7/8	- 1.26
Electronic Associates	30 1/4	16 3/4	23 3/4	20 1/2	20 1/2	- 4 1/2	-18.00
General Electric	115 7/8	82 1/2	103 1/2	99	102 5/8	+ 2 5/8	+ 2.62
Honeywell	100 3/4	63 1/2	92 7/8	85 3/4	92 3/8	+ 4 1/8	+ 4.67
IBM	600 1/2	382 1/2	587 1/4	567 1/2	587	+ 7	+ 1.21
Litton	120 3/8	79 1/2	109 5/8	101 1/8	109 1/2	+ 4	+ 3.79
Nat Cash Register	131	67 1/8	130	121 1/8	128 1/2	+ 6	+ 4.90
RCA	65 1/2	42 5/8	60 5/8	56 1/2	56 3/4	- 3 7/8	- 6.39
Raytheon	116 1/4	49	114 1/2	101 3/4	104 1/2	- 8 7/8	- 7.83
Sanders	70 1/4	37 5/8	70 1/4	62	66 1/8	+ 3 5/8	+ 5.80
Scientific Data	135 1/2	70 3/8	130 7/8	120 1/4	122 1/8	- 2 3/8	- 1.91
SCM	82 1/4	44 1/8	46 5/8	44 1/8	44 5/8	+ 1/4	+ 0.56
Sperry Rand	57 7/8	28 1/8	54 1/8	50 3/8	53 1/4	+ 1 1/2	+ 2.90
NYSE COMPUTER STOCK AVERAGE						- 0.17	- 0.93
AMERICAN STOCK EXCHANGE							
Audio Devices, Inc.	30 3/8	21 5/8	27	22 3/4	24 3/4	+ 2 1/4	+10.00
Automatic Data Processing	50 3/4	41 1/2	49	44 3/4	47 1/8	+ 2 1/8	+ 4.72
CalComp	99 1/8	60 1/4	86 5/8	79 1/8	79 3/8	- 4 1/4	- 5.08
Computer Applications	39 3/8	14	35 7/8	32 1/8	33 3/4	. . . .	. . . .
Computer Sciences	47 3/8	18	44 1/4	38 1/4	40 3/8	- 1 1/4	- 3.00
Digital Equipment Corp.	129 3/4	29 3/8	119 1/4	110 1/4	112 3/8	+ 2 5/8	+ 2.39
GC Computer Corp.	41	23 1/4	27 3/8	25 1/8	23 7/8	+ 5/8	+ 2.68
Leasco	93 1/2	33 5/8	85 3/4	80 5/8	82 7/8	+ 1 1/4	+ 1.53
Levin-Townsend Computer Corp.	57	10 7/8	50 7/8	46	46 7/8	- 3 3/8	- 6.72
Milgo Electronics	15 5/8	5 1/8	9 7/8	8 3/4	9 3/4	+ 1/8	+ 1.30
Mohawk Data Sciences	183	155	171	156 3/4	168	+ 6 1/8	+ 3.78
Planning Research	69 3/4	19 5/8	66 1/2	62 1/2	63 5/8	+ 1/8	+ 0.39
Potter Instrument	37 3/8	12 3/8	30 1/4	26 1/8	28	+ 1 1/8	+ 4.19
Randolph Computer Corp.	44 7/8	32 1/2	38 1/4	32 1/2	35	- 1 1/2	- 4.11
AMEX COMPUTER STOCK AVERAGE						+ 0.43	+ 0.85

	1967 High Bid	1967 Low Bid	Friday Bid	Friday Asked	Last Friday Bid	Week Net Change Bid	Week % Change Bid
OVER-THE-COUNTER							
Applied Data Research	30	3 1/8	25	27	27 1/2	- 2 1/2	- 9.10
Bolt, Beranek & Newman, Inc.	30	8 1/4	20 3/4	21 3/4	21	- 2 1/4	- 9.78
C-E-I-R, Inc.	22	16 5/8	21 1/4	21 1/4	21 1/4	. . . .	. . . .
Computer Usage	64	20 1/4	51	53	59	- 8	-13.56
Cyber-Tronics	17 1/2	4 3/4	12	12 1/2	11 3/4	+ 1/4	+ 2.13
Data Products	17 7/8	2 1/2	17 1/4	17 5/8	14 5/8	+ 3 5/8	+24.79
Digitronics	18 1/4	6	14 1/2	15	14	+ 1/2	+ 3.57
DPA, Inc.	16 1/4	4 1/4	8 7/8	9 3/8	8 7/8	. . . .	. . . .
Electronic Memories	56 1/2	12 3/4	51 3/4	52 1/2	53 1/2	- 1 3/4	- 1.27
Fabri-Tek	15 3/4	6	9 1/2	10	8 1/4	+ 1 1/4	+15.15
LMC Data, Inc.	13 5/8	7 3/8	10 1/2	11	11	- 1/2	- 4.54
Management Assistance	24 3/8	10 1/8	11 1/4	11 5/8	12 1/8	- 7/8	- 7.22
Memorex	226	63	172	175	172	. . . .	. . . .
Optical Scanning Corp.	92 1/2	25 3/4	66	68	64	+ 2	+ 3.12
Recognition Equipment, Inc.	131	48 1/2	114	118	102	+12	+11.76
Systems Engineering Labs	56 3/4	8 7/8	50 1/2	53	53	- 2 1/2	- 4.72
University Computing Co.	134	65	116	137	124	+10	+ 8.06

HOW TO RECRUIT THE RIGHT MAN FOR THE JOB

By Everett D. Parker
Personal Page Editor

"What this country needs is a good five-cent cigar," was said so long ago most of us have forgotten who said it. "What we need is a good programmer," was said as recently as yesterday and all of us know who said it. Data processing managers are desperate for skillful programmers and competent systems analysts. Companies, large and small, manufacturers and users, are looking everywhere for competent and stable employees. *Recruiting competition has become as tough and as earnest as selling computers and obtaining software contracts.* Once a computer is sold or a contract obtained, who installs and who writes? With the increased sales volume of computers and the establishment of hundreds of auxiliary firms throughout the country, who is going to do all the work to maintain and develop the computer systems? Where will a manager find talent adequate to the task at hand? Below are some suggested sources – traditional but useful – to discover talent hidden somewhere in the honeycomb of industry.

Employment Agencies

The quickest, and in the long run maybe the least expensive, way to find good employees is via an employment agency. Agencies come in assorted sizes and possess a variety of contacts. If you develop a solidly professional relationship with an agency, its contacts and sources will serve your requirements admirably. You must select your agencies well and work with them as closely as possible. When you contact an agency, large or small, be clear what job you want filled and what kind of man you are looking for. The more clearly the requirements are explained the more responsive will the agency be. While employment agencies generally charge a ten per-cent fee of the applicant's annual salary, if they know their job and have done their work, they earn the reward. *Don't forget – the better its counselors know their jobs, the easier an agency makes it look.* If you can find an agency that is responsive and fills your needs in a short time, you have found a gold mine. *Time is the enemy of recruiting* and the quicker you can fill the opening, the sooner the job gets done, and the greater the amount of business – and satisfied customers – you can maintain. (For more information on how to judge and how to work with employment agencies, see "Employment Agencies – Good or Bad?" COMPUTERWORLD, Vol. I, No. 5, Sept. 13, 1967). Sometimes a one thousand dollar agency fee is worth it, especially when you consider the cost – in money and time – of advertising.

Employment Advertising

Newspaper advertising has a tendency to frighten a manager when he finds himself attempting to create an ad on his own. How should he approach advertising?

First, he should think through the qualifications for the position and write them down. Once he has all the requirements on paper, he should consult the local newspaper's advertising department. Generally a newspaper's advertising department will offer suggestions for the lay-out of the ad and how to present the narrative explaining the available position. A manager will probably derive as much benefit from a helpful ad department as he would through a large advertising agency.

Two *traditional formats* which are useful for a variety of purposes are "open" ads and "blind" ads. An open ad is generally an elaborate display with an extensive or cleverly written narrative. The open ad gives the Company's name, address and telephone number. The ad encourages contact via phone and/or resume.

A blind ad is one which is seldom as elaborate as an open ad, though this is by no means a rigid rule. While the blind ad describes the position and generally gives the same information as the open ad, the only contact information is a box number addressed to the newspaper itself.

If you run a business which has a small staff and you don't have the time

to recruit, interview, screen and select, then a blind ad is probably the most helpful. A blind ad creates intrigue and, if well-written, interest. The manager can screen the resumes and be most selective of those applicants he will interview. The courtesy of a "thanks-but-no-thanks" letter is not demanded when the resume is in response to a blind ad. *All in all, a blind ad is a helpful tool for the busy manager with minimal funds and minimum time at his disposal.*

Employee Referrals

One major source for good prospects is employee referrals. Shortly after a man joins a company, his manager should ask him if he has any friends who would be interested in a similar opportunity. Be careful here. The point is not to intimidate a new employee to divulge names and numbers of former associates. The manager should make this clear when he asks. Many times, however, when a man begins looking for another job, several of his friends may show great interest and be eager to pursue the same course. Instead of asking for names and numbers a manager would be wise to ask the new employee to have interested parties phone him directly and discreetly. This procedure puts the impetus squarely on the applicant and avoids any taint of unethical behavior on the manager's part. This conduit of talent is also useful and effective with current employees who may have professional friends located with other firms.

Sometimes a firm – small ones especially – will offer a financial inducement to its employees who refer friends or professional acquaintances to the company. If a man refers a friend to the company and the man is hired, some companies will present an award as high as one hundred dollars for such a referral. It is rumored that one major manufacturer gives away color television sets as an inducement for such referrals. A policy of this kind should be used discreetly. Abuse of such a privilege could lead to dramatic morale problems.

College Recruiting

Leave college recruiting to the large firms. It is costly and not very productive. *You should distribute job listings with placement offices of colleges in your vicinity and maintain contact with the placement official.* But you should only spend time and money on the college campus when you can carry out a training program or have a place for programmer trainees. Few college graduates are ready and able programmers.

Conclusion

In a field and a profession as dynamic as this one, traditional approaches may not be the most helpful – but they have proved to be the major avenues of recruiting in the data processing industry since it began. Use them and see what happens. What is good for one company may not be helpful to another, but all the above methods have been productive and show no signs of becoming less so – except that the employment market itself is growing tighter and tighter. In the coming years and in a forthcoming article we may find it wiser and cheaper to concentrate on how to retain employees rather than how to recruit them.

Send your comments to:
Everett D. Parker
COMPUTERWORLD, Inc.
129 Mt. Auburn St.
Cambridge, Mass.

Bibliography

A recent and reasonably successful book on the subject of recruiting is available from the American Management Association. *The Recruitment Function* by Robert H. Hawk, AMA, Inc. 1967 outlines an entire recruiting approach. His words are more for large than small companies, but both will find its contents useful. *The Executive Job Market* by Auren Uris, McGraw-Hill Co. 1965 gives practical hints on all the preliminary skills of hiring. For assistance in knowing what an employment agency is all about write to the National Employment Association, 2000 K St. NW, Suite 353, Washington, D.C. 20006 and ask for the pamphlet, "Private Employment Agencies, 1966-1967." The document costs one dollar and will be sent upon request.

Subscribe To Computerworld!

▪▪▪▪▪▪ Orders and Installations ▪▪▪▪▪▪

Comress, Inc., has negotiated a contract for supplying its SCERT (Systems and Computers Evaluation and Review Technique) simulation system to the *Security First National Bank of California.* The contract is for the annual lease of SCERT which will be used to coordinate management of the bank's data processing installation. This longer term application of SCERT is an out-growth of the Security First National's previous use of the system on two specific applications.

The computers at *Safeco Insurance Company* are talking to each other from River Edge, N.J. to Seattle, Washington. The result is one of the most advanced data collection systems in the insurance industry.

Safeco has linked by phone an *IBM* System/360 Model 20 at its Seattle headquarters to nine other Model 20's at divisional offices in the United States and Canada.

Automatic Electric Co., a subsidiary of General Telephone & Electronics, has awarded a major software development contract to *C-E-I-R, Inc.*

The contract calls for C-E-I-R to develop a comprehensive "package" of computer programs.

Systems Engineering Laboratories, Inc. has announced receipt of a $76,000 contract from *Republic Aviation Division of Fairchild Hiller,* Farmingdale, Long Island, for a SEL 810A Computer System.

The *Fiat Company,* largest automobile manufacturing concern in Italy, announced the placement of an order for a UNIVAC 1108 Computer System with *Sperry Rand Corporation's UNIVAC Division.*

New GE Data Sets

Continued from Page 1

within a multiplex group or supergroup.

List prices for the Diginet equipment will range from about $500 to $6000 per terminal end. Present plans are to offer the equipment for purchase only, not for lease. The equipment is designed to be compatible with comparable Bell System products, wherever such products are offered.

Production of the low-speed Diginet 100 and 200 Series data sets is already under way at GE's Lynchburg facility. Production of the high-speed equipment is scheduled to begin next year.

Litton Industries Wins Contract For Army's TACFIRE Program

Tops Burroughs and IBM Studies

WASHINGTON, D.C. -- The Data Systems Division of Litton Industires has won the Contract Definition Phase of the Army's TACFIRE Program. Burroughs and IBM also competed in the five-month Contract Definition Phase. Jointly announcing the selected winner were Major General William B. Letta and Brigadier General Wilson R. Reed.

Brigadier General Wilson R. Reed, who announced the TAC-FIRE winner.

Total Package Procurement

This procurement is the first Army project to undergo contract definition in which the ensuing procurement is to be placed on contract using the total package procurement concept. The Contract Definitio Phase was a five month study in which three competitors submitted technical designs, contract proposals and price quotations for a "Total Package Procurement." This is a relatively new concept in the Defense Department where the Government contracts for the development, production and field support of a delivered system.

TACFIRE

TACFIRE (Tactical Fire Direction System) is part of the Army's program to exploit new technologies of data processing and sub-miniature electronics. TACFIRE is a digital computer based system which will be designed to increase the effectiveness of field artillery supporting fires by automation of functions now handled manually.

Director of the ADSAF (Automatic Data Systems within the Army in the Field) program of which TACFIRE is a part, is Brigadier General Wilson R. Reed. General Reed assumed command of the Automatic

New Contract Idea Used In Selection

Data Field Systems Command last month. Previously he was Deputy Secretary of the General Staff in the Office of the Chief of Staff, Department of the Army. Prior to that, General Reed held the position of Deputy Chief of the Programs and Analysis Division.

The Electronic Command at Fort Monmouth, N.J., which furnished procurement and technical support to the TACFIRE Project Manager, will be the developing agency for TACFIRE. Other Army and Government agencies participated in the contract definition phase and' in the evaluation of the proposal submissions of Litton Industries, IBM, and Burroughs.

Colonel Frederick C. Spann, Director, TACFIRE Directorate, Automatic Data Field Systems Command, Ft. Belvoir, Va., has been named TAC-FIRE Program Director.

Communitype Announces New Data Transmission System

Continued from Page 1

the computer. The variable record length permits the use of essential data that can be captured on the first writing, an accomplishment not possible with the 80-column punch card.

Accuracy Assurance

The system, which can receive as well as transmit data, has built-in facilities for the correction and prevention of errors. It is expected to be useful for organizations where information flows between office locations. Potential users might be consumer and industrial products companies with scattered sales offices, publishing companies for information retrieval, and insurance companies, hospitals and other service organizations for paperwork procedures.
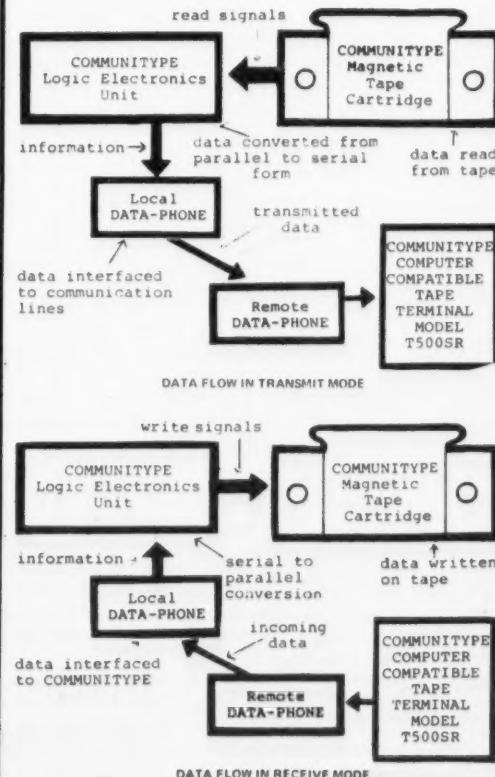
The Communitype system has been installed at the State University of New York at Albany since May. It is used to take data into a 1440 system and prepare it for use under the generalized Information System on IBM's 360. Data is transmitted from the 59 branches of the State University.

New software has been designed to handle the free form data, eliminating the need for reprogramming.

The introduction of Communitype brings with it the concept of computer input from a source other than the keypunch area. The pattern heretofore has often been typist to keypunch to computer. With Communitype's system the keypunch function is entirely omitted.

Having studied government reports on the comparative accuracy of typists and keypunch operations, Robert King, company president, told COMPUTERWORLD that he believes the use of typed input will insure faster and more accurate input to the computer. He pointed out that typists are trained to be accurate, and their accuracy rate is figured in their speed. They are also used to checking their work for errors, which are immediately visible to them.

Below are charts which show the flow of information for the Communitype system.

DATA FLOW IN TRANSMIT MODE

DATA FLOW IN RECEIVE MODE